

Claims

1. Front-end circuit (DX) for at least two mobile wireless systems with different frequency bands, a frequency band being assigned to each mobile wireless system,

- 5 - with a common antenna connection (ANT_{in}) arranged on the input side,
- with at least two signal paths (RX1, RX2) electrically connected to the antenna connection (ANT_{in}) and arranged in parallel to one another, one signal path being arranged in a mobile wireless system, and
- 10 - with individual electric gates ($RX1_{out}$, $RX2_{out}$) for each signal path, arranged on the outer side, with these gates being connectable to secondary stage circuits,

where a unique frequency band is assigned to each signal path (RX1, RX2),

where a band-pass filter (F1, F2) is arranged in each signal path (RX1, RX2),

where the band-pass filter (F1, F2) essentially contains thin-layer resonators (RE) and is directly connected to the antenna connection,

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2. Front-end circuit according to claim 1,

in which a balun is connected in at least one of the signal paths (RX1, RX2).

3. Front-end circuit according to claim 2,

- 20 in which the balun is connected in at least one of the signal paths (RX1, RX2) between the band-pass filter (F1, F2) and the corresponding electric gates ($RX1_{out}$, $RX2_{out}$).

4. Front-end circuit according to one of claims 1 to 3,
in which the band-pass filter (F1, F2) exhibits balun functionality.

5. Front-end circuit according to one of claims 1 to 4, in which at least two of the thin-layer resonators are stacked on top of one another and/or acoustically coupled with one another, thereby forming a compound resonator.
- 5 6. Front-end circuit according to one of claims 1 to 5, which guaranties a separation of frequency bands with a selection of at least 20 dB.
7. Front-end circuit according to one of claims 1 to 6, in which a plurality of band-pass filters (F1, F2) having thin-layer resonators and connected to a duplexer (D1, D2) are
10 arranged in at least one of the signal paths (RX1, RX2),
where this signal path (RX1, RX2) exhibits a reception path (RX) and a transmission path (TX).
8. Diplexer module according to claim 7,
15 where an LNA (V1) is connected downstream from the duplexer (D1, D2) in the reception path (RX) and/or a power amplifier (V2) in the transmission path (TX).
9. Diplexer module according to claim 7 or 8,
where an additional band-pass filter (F11, F21) is connected downstream from the
20 duplexer (D1, D2), the LNA (V1) and/or the power amplifier (V2).
10. Diplexer module according to one of claims 7 to 9,

where, in at least one of the signal paths (RX1, RX2), the reception path (RX) and/or the transmission path (TX) are provided for conducting a symmetrical signal.